

Remarks

Favorable reconsideration of this application, in view of the above amendments and in light of the following remarks and discussion, is respectfully requested.

Claims 1-17 are currently pending in the application; Independent Claim 1 having been amended, and new Claims 2-17 having been added, by way of the present response.

Applicants respectfully assert that support for the new claims is self-evident from the originally filed disclosure, including the original claims, and that therefore no new matter has been added.

In the outstanding Office Action, Claim 1 was rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,883,644 to Nicoloff, Jr., et al. (Nicoloff). Applicants respectfully assert that the rejection has been overcome for the following reasons.

The present invention is directed to print heads for use in a printing apparatuses that print images by forming dots on print medium. Independent Claim 1 recites a plurality of dot formation element groups for forming dots of different inks. The plurality of dot formation element groups is arrayed in a prescribed order in a sub-scanning direction. Dot formation elements of each group are arranged at an identical pitch k in the sub-scanning direction, the pitch k being set at an integer multiple value that is at least two times a pitch of dots to be formed on the print medium in the sub-scanning direction. The print head is formed so that a spacing between end dot formation elements of adjacent groups is M times the pitch k where M is an integer of at least 2.

Nicoloff is directed to a resolution-dependent and color-dependent print masking. As shown in Figure 20, for example, of Nicoloff, nozzle spacing 205 in the

black-ink and color-ink arrays is the same, $1/300$ inch.¹ About $1/60$ inch added clearance 74, 75, is provided between the color ink arrays.² A separation 211 between adjacent nozzles is twice the nozzle spacing 205, $1/150$ inch.³

The Office Action seems to assert that (i) the separation 211 and (ii) the clearance 74, 75 of Nicoloff are analogous to the claimed features of (i) a pitch k between dot formation elements of dot formation elements groups and (ii) a spacing between end dot formation elements of adjacent dot formation element groups, respectively. The Office Action seems to further assert that therefore Nicoloff teaches or suggests the claimed features of a spacing between end dot formation elements of adjacent groups is M times a pitch k , where M is at least 2. However, Applicants respectfully assert that even if Applicants agreed with these assertions, which Applicants do not, Nicoloff still does not teach or suggest the claimed features recited in independent Claim 1.

Rather, Applicants respectfully assert that Nicoloff does not state a pitch of a dot to be formed by the nozzles of the black ink and color ink arrays. Thus, Applicants respectfully assert that Nicoloff does not teach or suggest the claimed features of dot formation elements of each group being arranged at an identical pitch k in the sub-scanning direction, the pitch k being set at an integer multiple value that is at least two times a pitch of dots to be formed on the print medium, as recited in independent Claim 1. Specifically, independent Claim 1 recites “the pitch k being set at an integer

¹ Column 16, lines 24-30.

² Column 16, lines 31-37.

³ Column 16, lines 62-67.

multiple value that is at least two times a pitch of dots to be formed on the print medium in the sub-scanning direction.” Thus, for these reasons, Applicants respectfully request that the rejection of independent Claim 1 under 35 U.S.C. § 103(a) be withdrawn and the independent claim allowed.

Dependent Claims 2-16 depend from independent Claim 1, and are therefore also allowable for the same reasons as the independent claim, as well as for the features of the respective dependent claims. Thus, Applicants respectfully request the allowance of dependent Claims 2-16.

Further, Applicants respectfully assert that new independent Claim 17 recites features that are not taught or suggested by the references of record in the application, including Nicoloff. Specifically, Applicants respectfully assert that independent Claim 17 recites novel and unobvious features of arranging dot formation elements of dot formation element groups at an arranging pitch in a sub-scanning direction, the arranging pitch being a first integer multiple of a pitch of dots to be formed in the sub-scanning direction, the first integer being at least 2. Thus, Applicants respectfully request the allowance of independent Claim 17.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1-17 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact the undersigned representative at the below listed telephone number.

Appl. No: 10/082,249
Reply to Office Action of May 21, 2003

Finally, the attention of the Patent Office is directed to the change of address of Applicants' representative, effective January 6, 2003:

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Please direct all future communications to this new address.



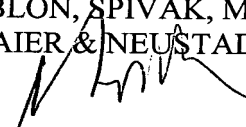
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Respectfully submitted,

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